

FOOD SERVING SET FOR ROASTING OVEN

Cross-Reference to Related Application

This application is a continuation-in-part of U. S. Patent Application No. 10/124,686 entitled Food Serving Set for Roasting Oven filed April 19, 2002 and claims the benefits provided under 35 USC §120.

Field of Invention

The present invention relates to cooking appliances and, more particularly, to a food serving set for use with a roasting oven or other similar deep well cooker including both a collapsible supporting rack for food containers, which can be folded or disassembled for storage and packaging within the roasting oven and, in the alternative, a non-collapsible supporting rack for such food containers.

Background of the Invention

Electric cooking pots for preparing and serving hot foods are well known in the prior art. Such cooking pots typically include a deep well member and a heating element arranged in functional relation thereto for supplying heat. Such cooking pots may be provided with compartmented trays, which are disposed within the interior space of the cooker for reheating and maintaining food in a ready-to-eat condition.

However, such compartmented trays are not convenient for the storage of leftover food items due to size constraints within a typical refrigerator. Further, such serving trays typically are not easily handled when hot, are not stackable (i.e. one within another) to save space, and are not conveniently packaged at the time of manufacture due to the lack of available space within the interior cavity of the roasting oven. As a result the food trays must be packaged and shipped separately, which increases overall manufacturing costs.

Thus, the present invention has been developed to resolve this problem and other shortcomings of the prior art.

Description of Related Prior Art

U. S. Design Patent Nos. 230,243; 283,666; 284,727; 305,855; 358,292; and 431,149 disclose cooking appliances and/or compartmented trays of generally similar subject matter in this field of art. However, only the ornamental appearance is illustrated for these devices and no technical disclosure or functional details are discernable.

While these devices fulfill their respective, particular objectives and requirements, the aforementioned patents do not disclose the present invention. The present inventive device comprises a food serving set including a plurality of individual food containers, which are suitable for storage, heating and serving of food items. The food containers are designed to reside in a supporting rack within the interior space of a roasting oven or other deep well cooker during use. The supporting rack and/or the individual food containers feature lift out handles for the convenience and safety of the user. The food containers are suitable for refrigerator storage of leftover food items being provided with sealable lids for all embodiments. In one embodiment the supporting rack is collapsible and may be folded and/or disassembled for storage within the interior space of the deep well cooker after use or during packaging. Alternatively, the supporting rack is provided in a non-collapsible embodiment. The individual food containers are designed to nest together in stackable relation for convenient packaging and storage within the roasting oven.

In these respects the present invention substantially departs from the conventional concepts and designs of the prior art, and in so doing provides a food serving set primarily developed for the purpose of food service and storage.

SUMMARY OF THE INVENTION

Accordingly, the present invention provides a food serving set for use with a roasting oven or other similar deep well cooker comprised of a plurality of individual containers with sealable lids for reheating and maintaining food items in a ready-to-eat condition. The present serving set features a collapsible supporting rack, which positions such individual containers within the deep well cooker while in use. In one embodiment the supporting rack is foldable for convenient storage of the serving set within the cavity of the roasting oven. In another embodiment the supporting rack may be easily disassembled for storage using a latching mechanism for the users convenience. In yet another embodiment the collapsible supporting rack is replaced by peripheral supporting flanges, which are integrally formed on the individual food containers to support them within the deep well cooker. In still yet another embodiment the supporting rack is provided in a non-collapsible configuration to reduce manufacturing costs. The food

containers are designed to nest together in stacked relation for efficient packaging and storage within the roasting oven.

Other features and technical advantages of the present invention will become apparent from a study of the following description and the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

The novel features of the present invention are set forth in the appended claims. The invention itself, however, as well as other features and advantages thereof will be best understood by reference to the following detailed description of an illustrative embodiment when read in conjunction with the accompanying figures wherein:

Fig. 1 is a front elevational view of a roasting oven wherein the serving set of the present invention is utilized;

Fig. 2A is a longitudinal cross-section of the roasting oven showing details of the construction thereof;

Fig. 2B is a transverse cross-section of the roasting oven showing further details thereof;

Fig. 3A is a top plan view of the food serving set of the present invention within a collapsible supporting rack;

Fig. 3B is an exploded perspective view of the food serving set of Fig. 3A showing the components thereof;

Fig. 3C is an exploded elevational view of another embodiment of the serving set shown in relation to the removable liner of the roasting oven;

Fig. 3D is a perspective view of the supporting rack the food serving set of Fig. 3C shown in a disassembled condition;

Fig. 4A is a top plan view of another embodiment of the food serving set of the present invention within a non-collapsible supporting rack;

Fig. 4B is an exploded perspective view of the food serving set of Fig. 4A showing the components thereof;

Fig. 4C is an exploded elevational view showing the food serving set of Figs. 4A and 4B in relation to the removable liner of the roasting oven;

Fig. 5 is a perspective view of an alternative embodiment of the supporting rack of the serving set shown in a folded condition;

Fig. 6A is a top plan view of an alternative embodiment of the supporting rack in an oval configuration;

Fig. 6B is a top plan view of the supporting rack of Fig. 6A shown in a disassembled condition;

Fig. 6C is a top plan view of another embodiment of the oval supporting rack in a non-collapsible configuration;

Fig. 7 is a top plan view of an alternative embodiment of a collapsible supporting rack in a generally rectangular configuration;

Fig. 8A is a perspective view of the top surface of the D-shaped end section of the supporting rack seen in Fig. 7 showing details thereof;

Fig. 8B is a perspective view of the bottom surface of a D-shaped end section of the supporting rack seen in Fig. 7 showing details thereof;

Fig. 9A is a perspective view of the top surface of the center section of the supporting rack seen in Fig. 7 showing details thereof;

Fig. 9B is a perspective view of the bottom surface of the center section of the supporting rack seen in Fig. 7 showing details thereof;

Fig. 9C is a top plan view of another embodiment of the rectangular supporting rack in a non-collapsible configuration;

Fig. 9D is a perspective view of another embodiment of the food serving set wherein the supporting rack and the individual food containers are provided with pivoting handles;

Fig. 10A is a perspective view of an alternative embodiment of the present serving set in a rectangular configuration wherein a supporting rack is not required;

Fig. 10B is a top plan view of the serving set shown in Fig. 10A;

Fig. 10C is an exploded elevational view of another embodiment of the food serving set wherein the center food container includes overlapping lateral edges;

Fig. 10D is an elevational view of the food containers of Fig. 10C shown in stacked relation for storage;

Fig. 10E is a perspective view of another embodiment of the food serving set wherein the individual food containers are provided with pivoting handles;

Fig. 11A is a top plan view of an alternative embodiment of the present serving set in an oval configuration; and

Fig. 11B is an exploded elevational view of the serving set shown in Fig. 11A;

Fig. 12 A is a top plan view of an alternative embodiment of the serving set wherein a supporting rack is not required; and

Fig. 12B is an exploded perspective view of the serving set shown in Fig. 12A.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Prior to describing the food serving set of the present invention in detail it may be beneficial to review the structure and function of a roasting oven or other deep well cooker wherein the present serving set is utilized. With further reference to the drawings, there is shown therein a preferred embodiment of a roasting oven in accordance with the present invention, indicated generally at 10, and illustrated in Fig. 1. The present roasting oven 10 is comprised of an outer housing 22 equipped with external handles 24 and feet 26. In the preferred embodiment the housing 22 is constructed of sheet steel or other suitable material and is provided in different exterior finishes. The roasting oven 10 is also provided with a lid 28 equipped with a handle 30. A hinge structure, indicated generally at 75, attaches the lid 28 in opening/closing relation to the housing 22.

The present roasting oven 10 also includes an internal heating well 36 disposed within the housing 22 as more clearly shown in Figs. 2A and 2B. The heating well 36 is constructed of enamel-coated steel, cast aluminum, cast iron or other material having suitable physical characteristics. Such a roasting oven 10 may include a wrap-around heating element, indicated generally at 40, and/or a top heating element, indicated generally at 150.

In the preferred embodiment the present roasting oven 10 also includes a removable cooking liner 45 including a peripheral flange member 45a which is seated on the upper edge of the housing 22 as shown. The liner 45 is also constructed of stainless steel, enamel-coated steel, cast aluminum or other suitable material. The cooking liner 45 is easily removed from the heating well 36 for washing for the convenience of the user.

A layer of heat-resistant insulating material (not shown) is disposed in the air space as at 20 between the housing 22 and the cooking well 36 as shown in Figs. 2A and 2B. Numerous types of heat insulating materials having physical and chemical properties

suitable for this application are commercially available. Since such heat insulating materials are well known to those skilled in the art, further detailed discussion of the same is not deemed necessary.

The present roasting oven 10 may be constructed in an oval, rectangular, round or other configurations with minor modifications to the heating elements 40, 150.

Referring again to Fig. 1, a control panel, indicated generally at 32, is typically provided on the lower front surface of the housing 22 to carry out the functions of the roasting oven 10. The control panel 32 includes a plurality of temperature control switches 33 which are electrically interconnected with the wrap-around and/or top heating elements 40, 150 and serve to regulate the operation thereof. The control panel 32 also includes a digital display 35, cooking mode switches 31, and a power switch 39.

In the preferred embodiment the control panel 32 is comprised of a heat-resistant housing 34 including a flexible, push button film 38 which overlays an electronic control circuit board 37 (Fig. 2B) that provides the user with fingertip control of the cooking functions. A ventilated compartment 80 is provided wherein the power supply circuit board is protected from the heat source.

The present roasting oven 10 is designed for use with standard household and commercial electrical systems. In the preferred embodiment the wrap-around heating element 40 is designed to operate in the range of 1000-1500 watts and the top heating element 150 to operate in the range of 25 to 75 watts. This wattage rating varies for a given application and capacity of the roasting oven.

With reference to Figs. 3A and 3B there is shown therein a food serving set in accordance with the present invention, indicated generally at 100, that is designed for use with such a roasting oven 10. In this embodiment the present food serving set 100 is comprised of two small food containers 105 and one large food container 110 each being provided with sealable lid members 105a and 110a respectively and a supporting rack 115 wherein the containers 105, 110 reside during use. It can be seen that the containers 105, 110 are constructed in a generally octagonal shape to conform with mating openings 106 and 111 respectively formed in the supporting rack 115. To this end each container 105, 110 includes a peripheral flange 105b, 110b formed thereon which overlaps and

engages a raised edge formed about the periphery of the openings 106, 111 in the supporting rack 115 as shown.

Containers 105, 110 and lid members 105a, 110a respectively may be constructed from heat resistant plastics, engineering resins, sheet metal or other materials having physical and chemical properties suitable for this application.

It will be appreciated that various other geometric shapes and configurations of the containers 105, 110 and mating openings 106, 111 formed in the supporting rack 115 can be utilized. Thus, the embodiments disclosed in the drawings are intended to be merely illustrative and not restrictive in any sense.

In the embodiment shown in Figs. 3A and 3B the half sections 115a and 115b form a simple butt joint at the juncture of their inner edges as at 109. The half sections 115a and 115b of the supporting rack 115 are configured to reside in the top opening of the roasting oven 10 or other deep well cooker and to engage the flange member 45a of the cooking liner 45. In operation the liner 45 is filled with water to a sufficient level as at 50 to contact the food containers 105, 110 when disposed in the supporting rack 115 in order to heat the food items contained therein.

In another embodiment shown in Figs. 3C and 3D the supporting rack 115' provides structures comprising collapsing means including, but not limited to, the following structures. Advantageously, the supporting rack 115' is constructed to be easily disassembled into half sections 115a', 115b' as shown in Fig. 3D for packaging and storage. In the embodiment seen in Fig. 3D this is accomplished by the use of a pair of latch assemblies, indicated generally at 120. Each latch assembly 120 is comprised of a tongue bracket 122 which is installed in sliding engagement with a mating hasp 124 such that the half sections 115a', 115b' are detachably secured in position.

In the embodiment seen in Fig. 3D, the supporting rack 115' is a stamped metal construction and tongue brackets 122 and hasps 124 are secured to the half sections 115a', 115b' by weldment or other suitable fasteners such as rivets.

It will be appreciated by those skilled in the art that various other types of attaching hardware and quick connect/disconnect fasteners may be utilized for detachably securing the half sections 115a', 115b' of the supporting rack 115' and such attaching hardware is understood to be within the scope of the present invention

With reference to Figs. 4A-4C there is shown another embodiment of the food serving set, indicated generally at 100', that is designed for use with the roasting oven 10. In this embodiment a non-collapsible supporting rack 215 is configured to reside in the top opening of the roasting oven 10 engaging the flange member 45a of the cooking liner 45 as shown in Fig. 4C. In practical use the liner 45 is filled with water to a sufficient level as at 50 to contact the food containers 105, 110 when disposed in the supporting rack 215 in order to heat the food items contained therein.

In another embodiment the half sections 115a", 115b" of a supporting rack 115" are permanently joined by hinge assemblies, indicated generally at 130, as shown in Fig. 5. Thus, the supporting rack 115" is foldable 180 degrees onto itself to the position shown for convenient storage within the interior space of the roasting oven 10. Thereafter, the supporting rack 115" is unfolded to a flattened condition for use with the present roasting oven 10 as described hereinabove..

Of course, the present serving set including the supporting rack can also be adapted for use with roasting ovens or other deep well cookers having different geometric configurations. Referring to Figs. 6A and 6B there is shown therein a modified supporting rack, indicated generally at 115'", which is oval in configuration having modified openings 106" and 111" formed therein. The food containers (not shown) for this embodiment are configured for mating engagement with their corresponding openings 106", 111". In this embodiment semi-oval half sections 115a'", 115b'" are detachably secured by a transverse bracket member 125 whereon a pair of modified tongue brackets 122" are mounted for sliding engagement with mating hasps 124" as shown in Fig. 6B.

In an alternative construction shown in Fig. 6C, a non-collapsible supporting rack 215" is provided, which is also oval in configuration having the same modified openings 106" and 111" formed therein. The food containers (not shown) for this embodiment are also configured for mating engagement with their corresponding openings 106", 111". The oval supporting rack 215" includes pivoting lift-out handle assemblies 225 for conveniently lifting the present serving set from the roasting oven during use.

In Fig. 7 there is shown yet another embodiment of a collapsible supporting rack, indicated generally at 115'''', which is generally rectangular in configuration. The

supporting rack 115''' is divided into three separate sections, namely, two D-shaped end sections 115a''' and a center section 115b''' each having a generally rectangular opening 132''' with corner radii for receiving a mating food container (not shown).

As more clearly shown in Figs. 8A and 8B, each of the D-shaped end sections 115a''' is a unitary construction conforming to the inner edge of the flange 45a of the cooking liner 45 (Fig. 3C). It can be seen that each end section 115a''' includes a pair of receptacles, indicated generally at 135, which are recessed into the upper surface of each end section 115a'''. In the embodiment shown receptacles 135 are cut and stamped into the sheet metal end sections 115a''' in a metal fabrication process such that rectangular sections 135a are displaced approximately 1/8 to 1/4 inch from the upper surface, but remain integrally attached thereto. The slotted openings 135b are so formed for receiving mating tabs 136 formed on the center section 115b''' shown in Figs. 9A and 9B.

Referring to Fig. 9C there is shown another embodiment of a non-collapsible supporting rack 215'', which is also generally rectangular in configuration. This embodiment of the supporting rack 215'' includes three generally rectangular openings 132'' with corner radii for receiving mating food containers 104 having a corresponding contour as shown in Fig. 9D. In this embodiment the supporting rack 215'' includes pivoting lift-out handles 225 at opposite ends thereof for conveniently lifting the present serving set from the roasting oven during use. In addition, each of the individual food containers 104 is provided with pivoting lift-out handles 225' for lifting the food containers from the supporting rack 215'' when in use.

In yet another alternative embodiment of the present serving set 100" as shown in Fig. 10A, a supporting rack as described hereinabove is unnecessary due to the modified configuration of the food containers. In this embodiment three generally rectangular food containers 105', 105'' including peripheral flanges 105b', 105c" respectively are configured to fit the inner edge 45b of the flange 45a of the cooking liner 45 as more clearly shown in Fig. 10B. It can be seen that the peripheral flanges 105b' of the outer pair of containers 105' are generally D-shaped in configuration being interchangeable and fitted to the opposite ends of the cooking liner 45.

Still referring to Fig. 10B, the center food container 105' includes a rectangular, peripheral flange 105c", which is configured to fit the central portion of the inner edge

45b of the cooking liner 45 as shown. It will be understood that in Figs. 10A-10B the lateral edges 105d" of the flange 105c" of the center container 105" are configured to form a butt joint with the adjoining lateral edges of the outer pair of food containers 105'.

In an alternative construction shown in Fig. 10C, the lateral edges 105d'" of the flange 105c'" of the center container 105'" are bent at a predetermined offset angle and are positioned in overlapping relation with the corresponding lateral edges of the outer pair of food containers 105'. In a preferred construction the lateral edges 105d'" are bent at a 90° offset angle. In this manner the center food container 105'" shown in Fig. 10C engages and overlaps the outer containers 105' maintaining the containers in position.

The food containers 105', 105", 105'" are fabricated with inwardly tapered sidewalls to permit the food containers to nest together in stacked relation as shown in Fig. 10D for convenient packaging and storage of the food containers.

In another embodiment of the food serving set illustrated in Fig. 10E, the individual food containers 105', 105", 105'" may be provided with pivoting lift-out handles 225' for lifting the food containers from the cooking liner 45 during use.

Similarly, a supporting rack is unnecessary in the embodiment of the food serving set 100'" illustrated in Figs. 11A and 11B. In this oval configuration of the cooking liner 45", the two food containers 105"" including peripheral flanges 105a"" are configured to fit the inner edge 45b" of the flange 45a" of the cooking liner 45". It can be seen that the peripheral flanges 105a"" of the pair of containers 105"" are semi-oval in configuration being fitted to the opposite ends of the cooking liner 45".

Referring now to Fig. 12A there is shown yet another embodiment of the serving set, indicated generally at 100''', wherein a supporting rack is not required. In this configuration of the serving set, a single large food container 105'''' including peripheral flange 105a'''' and two smaller food containers 110'''' including peripheral flanges 110a'''' are configured to fit the inner peripheral edge of the cooking liner 45. It can be seen that the inner lateral edges 110b'''' of the peripheral flanges 110a'''' of food containers 110'''' are bent at a 90° offset angle and are positioned in overlapping relation with the corresponding lateral edge of the larger food container 105'''' . In this manner the smaller food containers 110'''' engage and overlap the larger container 105'''' maintaining it in

position. A protuberance 155 is formed adjacent the midpoint of the inner lateral edge of flange 105a''', which functions to maintain the smaller food containers 110''' in position.

Thus, it can be seen that the present invention provides a versatile food serving set for use in combination with a roasting oven or other deep well cooker, which can be utilized for maintaining food items in a ready-to-eat condition. The food serving set features individual food containers having sealable lid members, which can be transferred directly from the refrigerator to the cooker. The food serving set includes a supporting rack, which positions the food containers within the cooker during use, and which is collapsible for efficient storage and/or packaging within the interior space of the cooker. In various alternative embodiments the supporting rack is non-collapsible or is not required as the food containers are provided with integral flanges, which conform to the inner peripheral edge of the cooking liner and support the food containers in position.

Although not specifically illustrated in the drawings, it should be understood that additional equipment and structural components will be provided as necessary, and that all of the components described above are arranged and supported in an appropriate fashion to form a complete and operative food serving set incorporating features of the present invention.

Moreover, although illustrative embodiments of the invention have been described, a latitude of modification, change, and substitution is intended in the foregoing disclosure, and in certain instances, some features of the invention will be employed without a corresponding use of other features. Accordingly, it is appropriate that the appended claims be construed broadly and in a manner consistent with the scope of the invention.